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ABSTRACT

The present invention relates to methods for use in producing epothilones and analogs and derivatives thereof. A general method according to the present invention broadly comprises performing an aldol condensation of a first compound with a second compound thereby to form a third compound selected from the formulas:

HOOC
$$R$$
 R_{1} R_{2} R_{3} R_{4} R_{4} R_{7} R_{7} R_{1} R_{2} R_{3} R_{4} R_{4} R_{5} R_{7} R_{8} R_{1} R_{2} R_{3} R_{4} R_{4} R_{5} R_{5} R_{6} R_{7} R_{8} R_{1} R_{2} R_{3} R_{4} R_{4}

and stereoisomers thereof, and performing a macrolactonization of the third compound. The present invention also provides chemical compounds, and methods for producing such chemical compounds, that are useful in producing epothilones and analogs and derivatives thereof.